

What is claimed is:

1. A process for making a golf ball, said process comprising:
forming at least one of a cover and a core component of said golf ball by mixing two or more reactants together to produce a reaction product having (i) a flex modulus of from about 1 to about 310 Kpsi, and (ii) a reaction time of less than 2 minutes, wherein said at least one of said cover and said core component
5 formed from said mixing operation has a thickness of at least about 0.01 inches.
2. The process according to claim 1, wherein said reaction product comprises at least one member selected from the group consisting of polyurethanes, polyureas, epoxies and unsaturated polyesters.
3. The process according to claim 1, wherein said reaction product comprises at least one member selected from the group consisting of polyurethane and polyurea.
4. The process according to claim 1, wherein said reaction product exhibits a reaction time of about 1 minute or less.
5. The process according to claim 4, wherein said reaction product exhibits a reaction time of 30 seconds or less.
6. The process according to claim 1, wherein said reaction product exhibits a demold time of 2 minutes or less.
7. The process according to claim 6, wherein said reaction product exhibits a demold time of 1 minute or less.
8. The process according to claim 1, wherein said cover is formed from said process.

9. The process according to claim 8, wherein said cover is a dimpled cover layer and said cover has a thickness of at least 0.02 inches.

10. The process according to claim 8, wherein said cover has a hardness of 10 to 95 Shore D.

11. The process according to claim 8, wherein said cover has a hardness of 30 to 75 Shore D.

12. The process according to claim 1, wherein said core component is formed from said process.

13. The process according to claim 2, further including a step of recycling at least a portion of said reaction product.

14. The process according to claim 13, wherein said reaction product is recycled by glycolysis.

15. The golf ball produced by the process of claim 1.

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16. A multi-piece golf ball comprising a reaction injection molded material comprising polyurethane/polyurea.

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17. The golf ball according to claim 16, wherein said reaction injection molded material comprising polyurethane/polyurea includes at least one of ether functional groups and ester functional groups.

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18. The golf ball according to claim 16, wherein at least 5% of the polyurethane/polyurea is formed from molecules obtained by recycling a material comprising one of polyurethane, polyurea, polyester, and polyethylene glycol.

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19. The golf ball according to claim 18, wherein said recycling occurs

by glycolysis.

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20. The golf ball according to claim 16, wherein said golf ball includes a core and a cover and at least said cover comprises reaction injection molded polyurethane/polyurea material.

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21. The golf ball according to claim 20, wherein said golf ball includes an exterior coating surrounding said cover.

22. The golf ball according to claim 21, wherein said exterior coating is applied over said cover after molding of the cover.

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23. The golf ball according to claim 20, wherein said core is selected from the group consisting of solid cores, multi-layer cores, wound cores, liquid filled cores, metal filled cores and foamed cores.

24. The golf ball according to claim 20, wherein said cover has a flex modulus of 1 to 310 kpsi.

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25. The golf ball according to claim 20, wherein said cover has a flex modulus of 5 to 100 kpsi.

26. The golf ball according to claim 20, wherein the hardness of said cover is 10 to 95 Shore D.

27. The golf ball according to claim 26, wherein the hardness of said cover is 30 to 75 Shore D.

28. The golf ball according to claim 27, wherein the flexural modulus of said cover is in the range 5 to 100 kpsi.

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29. The golf ball according to claim 20, wherein the flexural modulus

of said cover is higher than that of said core.

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30. The golf ball according to claim 20, wherein said golf ball includes a multi-layer cover.

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31. The golf ball according to claim 20, wherein said cover comprises a reaction injection molded material comprising polyurethane and further comprises at least one member selected from the group consisting of optical brightener, pigment, dye, antioxidant, and UV light stabilizer.

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32. The golf ball according to claim 20, wherein said cover further comprises a filler material.

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33. The golf ball according to claim 32, wherein said filler material includes at least one member selected from the group consisting of glass, metal, minerals, oxides, sulfides, titanates, polymeric resins and ceramics.

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34. The golf ball according to claim 32, wherein said cover further comprises an ionomer.

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35. The golf ball according to claim 20, wherein said cover exhibits a generally uniform consistency both at the seam and the poles.

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36. The golf ball according to claim 16, wherein said ball includes a core and a cover, and at least said core comprises a reaction injection molded polyurethane/polyurea material.

37. The golf ball according to claim 36, wherein said core comprises at least two components and at least one core component comprises reaction injection molded polyurethane/polyurea material.

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38. The golf ball according to claim 16, wherein said ball includes a

core and a cover, each of which comprises reaction injection molded polyurethane/polyurea material.

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39. The golf ball according to claim 16, wherein said polyurethane/polyurea material includes meta-tetramethylxylylene diisocyanate.

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40. A process for producing a golf ball including a step of (a) reaction injection molding a polyurethane/polyurea material to form at least one of a core layer and a cover layer of the ball.

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41. The process according to claim 40, further comprising a step of (b) recycling at least 20% of the polyurethane/polyurea that is produced in connection with step (a) but which is not incorporated into the ball during that step.

42. The golf ball produced by the process of claim 41.

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43. A process for producing a golf ball comprising: (a) forming a core, (b) covering said core with a covering material to form covered ball, and (c) coating and adding indicia to said covered ball, wherein at least one of steps (a) and (b) comprises reaction injection molding of a polyurethane/polyurea material.

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44. The process according to claim 43, further comprising a step of (d) recycling at least 20% of the RIM-produced material comprising polyurethane that was produced subsequent to step (a).

45. The golf ball produced by the process of claim 44.

46. A golf ball comprising at least one fast-chemical-reaction-produced layer, said layer having a flex modulus of 5 to 310 kpsi in a reaction time of 2 minutes or less and having a thickness of at least 0.01 inch.

47. The golf ball according to claim 46, wherein said ball further comprises a multi-layer cover and said at least one fast-chemical-reaction-produced layer is an inner cover layer.

48. ⁴⁴ A golf ball including a core and a cover, the cover comprising polyurethane/polyurea which is formed from reactants, wherein 5 to 100 weight percent of said reactants are obtained from recycled polyurethane/polyurea.

49. A golf ball according to claim 48, wherein the cover comprises a multi-layer cover and the at least one fast-chemical-reaction-produced layer is an inner cover layer.